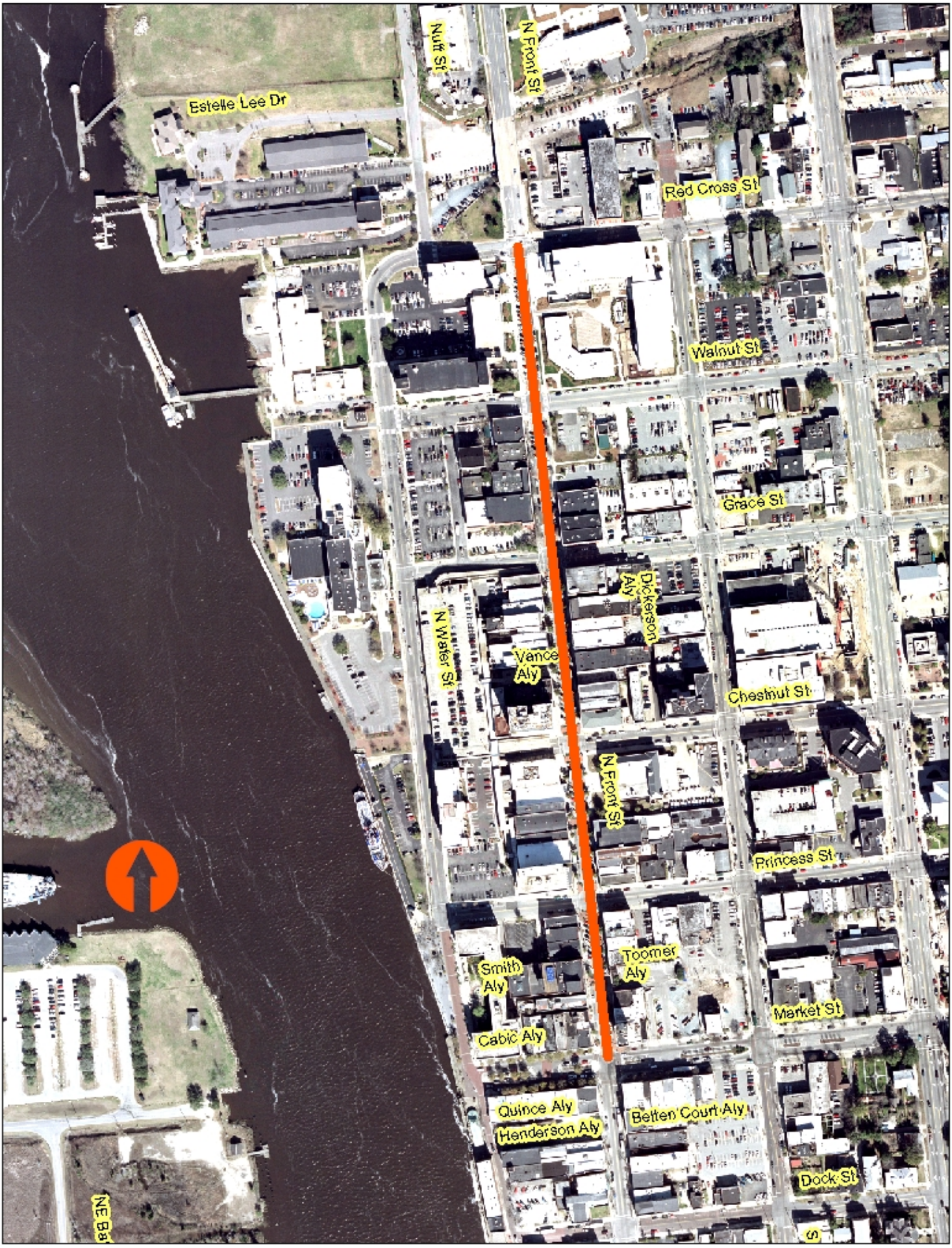
Front Street Conversion to two-way traffic

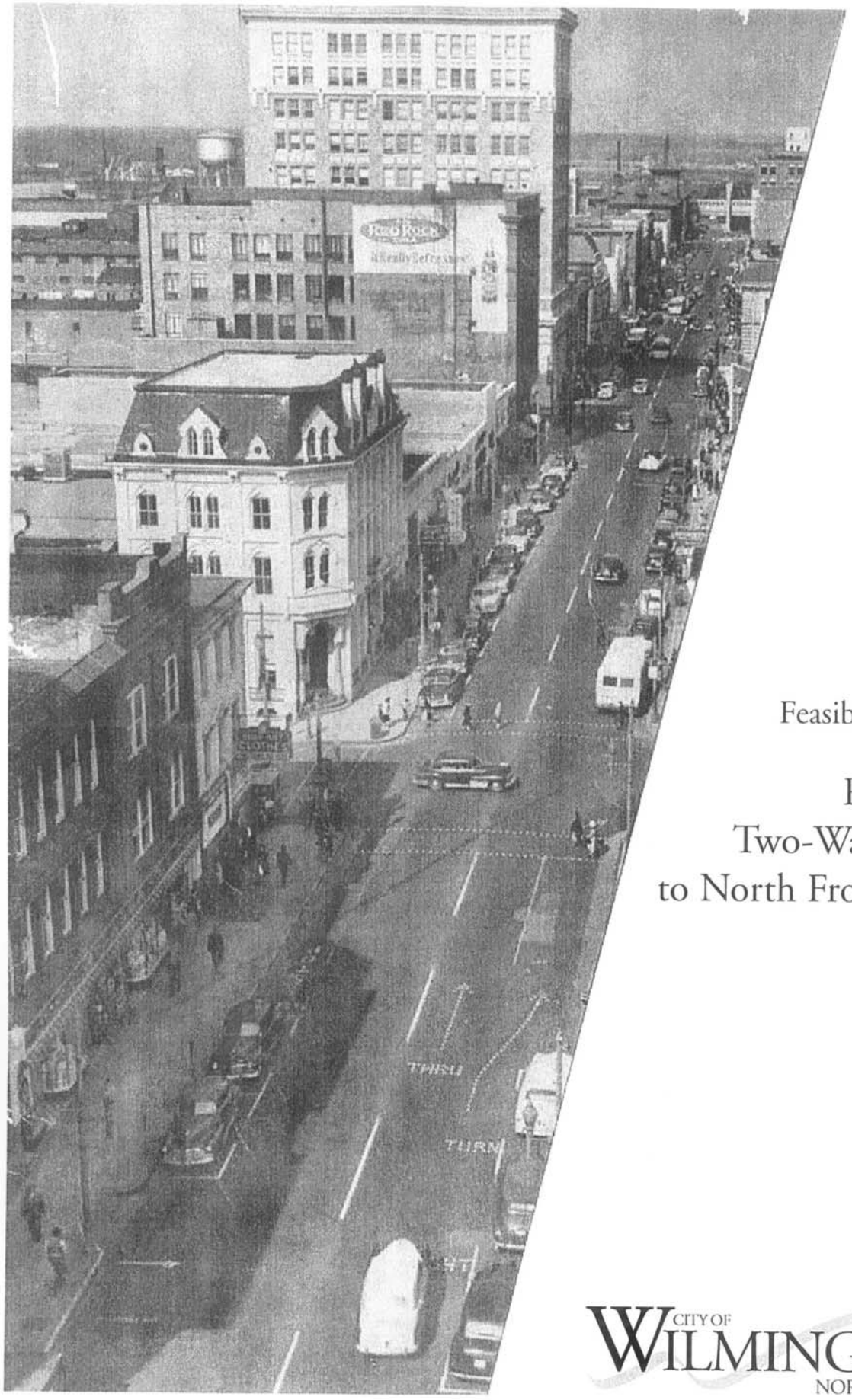
Since the Vision 2020 Plan was updated in 2004, there has been renewed interest in returning North Front Street to two-way traffic between Market Street and Red Cross Street. The Plan's action strategies include making this segment, which is now one-way northbound, a two-way corridor.

During January 2006, the City conducted several public workshops to further discuss the issue. The following clarifies certain points that were raised during these workshops.

- The features that create the character and pleasant ambience of North Front Street will remain. Since the additional travel lane will be between the existing curbs, the overall street width will not increase, nor will the sidewalk decrease. Existing mid-block crossings and landscaping will be preserved, as will sidewalks and other pedestrian features. New pedestrian walk lights will be added to increase safety at intersection crosswalks.
- Two-way traffic will not increase operating speeds. Motorists tend to drive more slowly when facing opposing vehicles and when narrow lanes are lined with parked cars.
- A two-way street will increase visibility of stores and businesses for motorists along North Front Street. Since both sides of North Front Street will be easily viewed from the street, merchants and shoppers alike will benefit. Additionally, buildings facing north on cross streets will be more easily viewed by motorists traveling south. When building fronts have greater visibility, successful and sustainable businesses are more likely to locate there, giving shoppers still another reason to walk along downtown streets.
- Keeping North Front Street one-way would not allow employees and convention-goers in the northern Central Business District area to take direct routes to many downtown stores…this would not be good for business. A two-way North Front Street would allow direct and easy access from the north to restaurants, the post office, retail stores and all the other destinations that line the corridor.
- There are plans in the works to help make North Front Street more attractive. The City of Wilmington and Wilmington Downtown, Inc. are initiating a Retail Strategy and Streetscape Enhancement Study to complement the conversion of North Front Street. In addition to the marketing strategy, the study will outline future streetscape enhancements that could make North Front Street a more pleasing, enticing area for pedestrians as well as motorists. Public input sessions will be held during the study process.
- A notable change to North Front Street will be the replacement of the angle parking with parallel parking spaces. This will help improve traffic safety as motorists will have better visibility while leaving on-street parking. Additionally, removing the angle spaces will improve aesthetics of the street by creating a less cluttered, more orderly appearance.
- Another improvement will be new traffic signals at Walnut Street and Red Cross Street. These signals will improve traffic and pedestrian safety as this busy area of the City continues to prosper.

Pedestrian appeal is a great strength of our downtown. Restoring North Front Street to two-way traffic will only enhance the traits that already make downtown a desirable area. Two-way traffic is just one of many important steps toward realizing the overarching vision and continued success of downtown Wilmington.


Estelle Lee Dr
Nutt St
N Front St
Red Cross St
Walnut St
Grace St
Dickerson Aly
N Water St
Vance Aly
Chestnut St
N Front St
Princess St
Smith Aly
Toomer Aly
Market St
Cabic Aly
Quince Aly
Henderson Aly
Betten Court Aly
Dock St

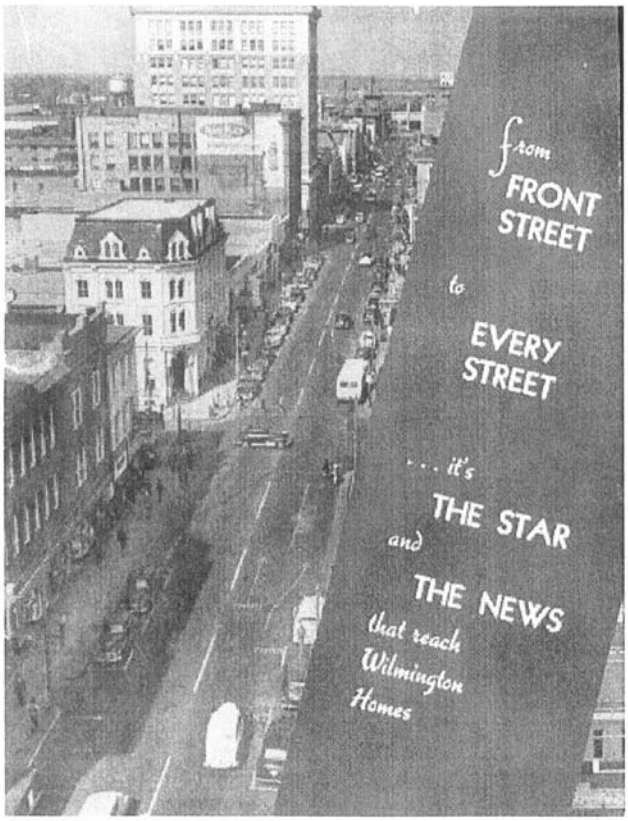


Feasibility Study:

Restoring Two-Way Traffic to North Front Street

CITY OF WILMINGTON
NORTH CAROLINA

Cover photograph taken from ad for
The Star and The News, 1951.



Copyright, Star-News

Photograph taken of North Front Street
from the top of the Trust Building, 2005.

City of Wilmington, Staff Photo

FEASIBILITY STUDY:
RESTORING TWO-WAY TRAFFIC
TO NORTH FRONT STREET

10/7/05

City of Wilmington, N.C.

305 Chestnut Street
Wilmington, NC 28401
October 7, 2005

Introduction

Since the Vision 2020 Plan was prepared in 2004, there has been renewed interest in returning North Front Street to two-way traffic between Market Street and Red Cross Street. The Plan's action strategies include making this segment, which is now one-way northbound, a two-way corridor. Although the potential benefits of such a change may be apparent, the idea was not formally studied until plans for the nearby convention center and other private developments that will affect vehicular and pedestrian patterns in the area began to move forward.

This report presents the findings of a study that considers whether returning the street to two-way traffic is technically feasible. The study takes into account, among other things, safety, parking, mobility and costs of needed improvements. Not included in the study is whether the public and affected business owners would support or benefit from such a change, or whether complementary streetscape improvements would be needed.

Immediately north of the study area the City is proposing to build a convention center on Nutt Street, PPD is relocating its corporate headquarters to North Front Street and Almont Shipping Terminals is planning a marina, residential and retail project. These developments will bring more vehicles and pedestrians to an area of downtown that has recently been either industrial or underutilized. This will also change the role that North Front Street plays in downtown Wilmington's transportation system.

Findings

It is technically feasible to restore North Front Street to two-way traffic. Although the change would result in 17 fewer on-street parking stalls, there would be improved access to existing businesses and better traffic circulation with the redeveloping northern downtown area. Not including two proposed traffic signals that are part of other economic initiatives, returning North Front Street to two-way traffic would cost approximately $200,000.

It is recommended that any such changes be coordinated in advance with Wilmington Downtown, Inc., the Parking Advisory Commission and the general public. Over the long-term, two-way traffic on North Front Street will be advantageous to downtown Wilmington as a whole. Most short-term construction impacts to local interests and businesses could be minimized through good project coordination and communication.

Discussion

Although the specific year and reasons North Front Street was made one-way are not readily available in City records, it likely followed national trends in the 1970's to create pedestrian malls that were designed to promote economic development in downtown areas hurt by suburban shopping centers. Interestingly, these pedestrian malls removed the very feature that differentiates urban commercial areas from strip shopping centers: a pedestrian-oriented environment that includes convenient parking and access. Photographs on sheet A-7 show parts of North Front Street in 1978 and 1983.

The primary purposes of North Front Street are to provide access to adjacent businesses and to allow pedestrians to walk safely. Secondary purposes of the street include moving vehicles and providing loading areas for businesses. As a commercial area, North Front Street relies in part on pedestrians being able to enjoy a pleasant environment that is distinct from suburban strip malls.

Commercial developments located along major thoroughfares often benefit from large volumes of pass-by traffic but may be hurt as motorists entering and leaving these centers encounter turn restrictions, medians and other elements of arterial street systems that are designed to increase mobility and safety. For example, Wilmington's thoroughfares are required to play three often competing roles: move large volumes of local traffic within the City safely and efficiently, carry through traffic that does not have an origin or destination in the City and provide access to commercial properties that line the corridors. It goes without saying that not all of these functions can be thoroughly satisfied by the existing surface street network.

Downtown areas have an inherent advantage over suburban strip developments in that gridded street systems allow easy access to urban commercial districts. Motorists driving to a specific block or shop in a grid system can often travel directly to and park near their destination. Beyond convenience provided to shoppers, direct routes to urban destinations reduce pollution and congestion, as well as frustration on the part of motorists who otherwise would be faced with navigating thoroughfares simply to get to or travel between commercial businesses. The gridded street system contributes to downtown Wilmington's viability as a prosperous commercial center—restoring North Front Street to two-way traffic will provide additional options for persons to reach their destinations and move within the area.

Upcoming development north of Red Cross Street will affect the function and operation of North Front Street as additional traffic is introduced to the corridor. Moreover, the connection of Martin Luther King, Jr. Parkway will shift additional motorists to the northern area of downtown. Under current conditions, North Front Street motorists southbound from North Third Street must turn either left or right at Red Cross Street. This is particularly difficult for visitors who are not familiar with the area and must then take indirect routes to some destinations. The loss of drive-by traffic potentially hurts North Front Street businesses as many motorists are directed back toward North Third Street, where they may choose to leave the area altogether. Providing two-way traffic on North Front Street will allow southbound motorists to continue traveling directly through the core of downtown Wilmington.

One-way streets are often in pairs where parallel streets move traffic in opposite directions. This is a traffic engineering solution for increasing capacity of street systems; however, when applied to downtown areas this may have serious downsides as urban streets are functionally converted to collector streets. Interestingly, there is no southbound couplet street for the northbound North Front Street traffic. This leads one to infer that the street was not made one-way with the intention of improving mobility. Rather, the designation was likely an attempt to improve business by maximizing on-street parking.

Existing Conditions

North Front Street in the study area generally has 40-feet of pavement width and full right-of-way improvements such as street trees, closed drainage, curb, sidewalk and underground utilities. Each block has a mix of parallel and angle parking, as well as commercial loading zones and taxi stands. Parking meters promote turnover and ensure public parking is available to business patrons.

Over the 5-year period ending in August 2005, there were 50 reported vehicular crashes on North Front Street between Market and Red Cross streets. Half were backing collisions related to drivers leaving angle parking stalls. The remaining 25 collisions were related to sideswipes, wrong turns, etc. Two of the incidents involved pedestrians. The number and type of collisions recorded on North Front Street are typical for urban areas where operating speeds are relatively low and vehicles are maneuvering in a limited space.

Proposed Conditions

Under the proposed conditions, North Front Street would become two-way in its entirety. This would capture traffic from the redeveloping northern area and make it more convenient for motorists to reach North Front Street. Likewise, it would expand options for trolley and other transit routes. Notably, this change would not reduce vehicular congestion on North Front Street. It would, however, make the area more accessible as a destination for shoppers, diners, tourists and those attending cultural events. Sheets A-1 through A-6 include aerial photos of the existing conditions, as well as diagrams of how parking and loading zones would be provided. Details regarding drainage and traffic signals are not shown for clarity.

Needless to say, significant physical changes and revisions to the operation of North Front Street would be necessary. To fully evaluate the overall impact of such a change, it

is important to consider issues regarding safety and pedestrians, vehicles, businesses and parking.

Safety and Pedestrians

The quality of street life in urban commercial areas differentiates them from suburban shopping centers. It is fundamental then, that as motorists park their cars and become pedestrians, that their safety and convenience continue. Toward that end, marked pedestrian crossings will be provided at all signalized intersections. To further improve safety, count-down pedestrian displays indicating the remaining time for each crossing will be installed. With two-way traffic on North Front Street it is not realistic to provide midblock pedestrian crossings as now exist. As a result, all crossings will be at signalized intersections where the pedestrian and vehicular movements can be best controlled.

Vehicular safety will be managed through clear and consistent signage and new or upgraded traffic signals. Given the nature of the corridor, the speed limit should remain 25 mph; however, it is anticipated that operating speeds will naturally fall below this range as motorists navigate through parallel parking areas, pedestrian crossings and signalized intersections.

Vehicular Issues

Unlike an arterial corridor, the vehicular purpose of North Front Street is to allow motorists to reach convenient parking and not necessarily to move large volumes of cars. For the two-way pattern, existing traffic signals will be upgraded to include southbound displays. New traffic signals will also be installed at the intersection of Walnut Street and North Front Street, as well as Red Cross Street and North Front Street. Although identified here, these two traffic signals are proposed to be funded through a separate City infrastructure improvement plan associated with northern downtown development.

With the conversion to two-way traffic, 17 fewer parking stalls will be provided on North Front Street. In addition, six accessible spaces will be moved to intersecting streets where traffic volumes are lower and persons using wheelchairs will have better access to nearby sidewalk ramps. In accordance with ADA guidelines, signs will indicate that these spaces are for vehicles displaying the appropriate permit.

North Front Street currently has commercial vehicle loading zones that accommodate full size delivery trucks. With the reconfiguration of the corridor, one 50-ft long loading zone will be provided on each block. (Eliminating loading zones on North Front Street altogether would provide eight additional on-street parking stalls, reducing the net loss to nine.) The 50-ft loading zones will allow single unit trucks (e.g. UPS delivery) to serve businesses throughout the day. During business hours, larger semi-trailer trucks (e.g. beverage and food delivery) would use loading zones on adjacent streets. Before 9:00 am these larger trucks could take multiple stalls while delivering to North Front Street businesses. While this change may present minor inconveniences to delivery drivers, patrons will enjoy having the additional on-street parking along North Front Street. The commercial vehicle loading zones could also serve as taxi stands during off-peak hours.

A free trolley travels North Front Street, carrying pedestrians between downtown destinations. With the midblock pedestrian crossings removed, the trolley will have stops at each intersection. To further expand its role in the downtown transportation system, the trolley could also include a southbound route on North Front Street.

Business Issues

Many of the specialty stores and restaurants that line North Front Street differentiate themselves from larger retail outlets through enhanced customer service and convenience. Available and easy parking along both sides of the street is part of this business model.

Interestingly, the existing one-way pattern blocks several storefronts from a driver's view. As motorists travel northbound, they do not have buildings on the south side of cross streets in their view. The diagram on sheet A-8 shows how buildings can be out of a motorist's line of sight on one-way streets. With two-way traffic, these locations will be visible to southbound motorists, making businesses more likely to attract new or impulse customers.

Required Changes

Converting North Front Street from one-way to two-way traffic will require changes to the public infrastructure. Although curbs along the corridor are aligned as they should be, the midblock islands will be removed and the intersection islands reconstructed. The existing sidewalks and fire hydrants will remain. The pavement itself will be resealed after the existing pavement markings are milled. Fresh pavement markings will then delineate parking and travel lanes. The changes are listed on sheets A-1 through A-6.

The most complex and costly element that would be reworked is the traffic signal system. The existing traffic signals at Market, Princess, Chestnut and Grace streets will be reconfigured to included southbound displays. Since several of the existing signals are aging, this would require new signal poles at some locations.

It is recommended that construction work be timed to avoid the December holidays and peak summer months. This would minimize impacts to businesses that rely on holiday and tourist-related sales. If coordinated properly, it is expected that most of the disruptive work could be completed in about six months.

Estimated Costs

The following is a breakdown of expected improvements and approximate costs. These costs are based on preliminary information and are sufficient for budgeting purposes. The estimate assumes that construction documents will be prepared in-house and that all

construction will be by private contractors. As final designs are developed, more accurate plans and cost estimates can be prepared.

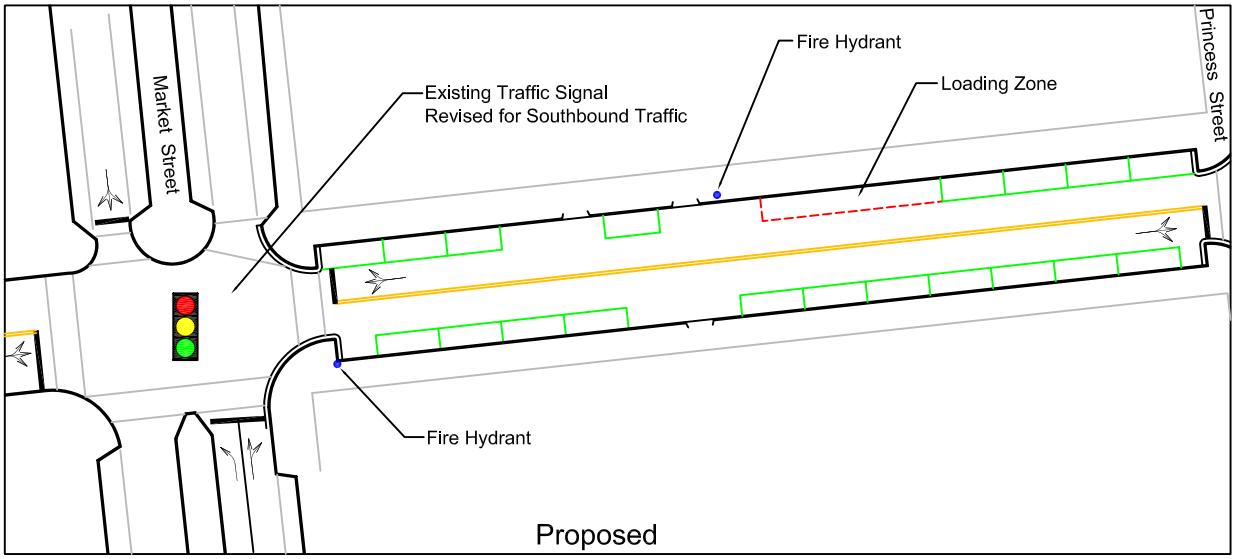
Street resealing and pavement markings:	$50,000
Traffic signals and signage:	$100,000
Curb and sidewalk work at intersections:	$50,000
Total estimated cost:	*$200,000*

(If the traffic signals at Front St/Walnut St and Front St/Red Cross St are not funded through other infrastructure improvement initiatives, an additional $250,000 will be needed for this project.)

Conclusion

This study is in response to the Vision 2020 Plan where restoring North Front Street to two-way traffic between Market Street and Red Cross Street is identified as a strategy for improving public amenities, attracting private investment, and increasing overall community value. The corridor, which has by and large been one-way for over 25 years, will be serving new purposes as additional roads connect to the area and northern downtown redevelops. This report finds that it is technically feasible to restore North Front Street to two-way traffic north of Market Street. Such a change would in all likelihood promote downtown business and better leverage the features that distinguish Wilmington's urban core from suburban shopping centers.

Before North Front Street is made two-way, input should be solicited from downtown interests and the traveling public as a whole. This will ensure that final recommendations and decisions are based on balanced conclusions that consider safety, business needs, mobility and citizen opinion.



Recommendations:

1) Add signal indications for SB traffic at Market St.
2) Add detection loops at signal.
3) Remove 2 CVL zones.
4) Remove 1 angle handicapped space and aisle.
5) Remove midblock chokers and pedestrian crosswalk.
6) Install new chokers on Front St. at the intersections.
7) Restripe parking to provide 19 parallel spaces and 1 CVL zone.
8) Relocate parking meters and signs.

SCALE
0 70

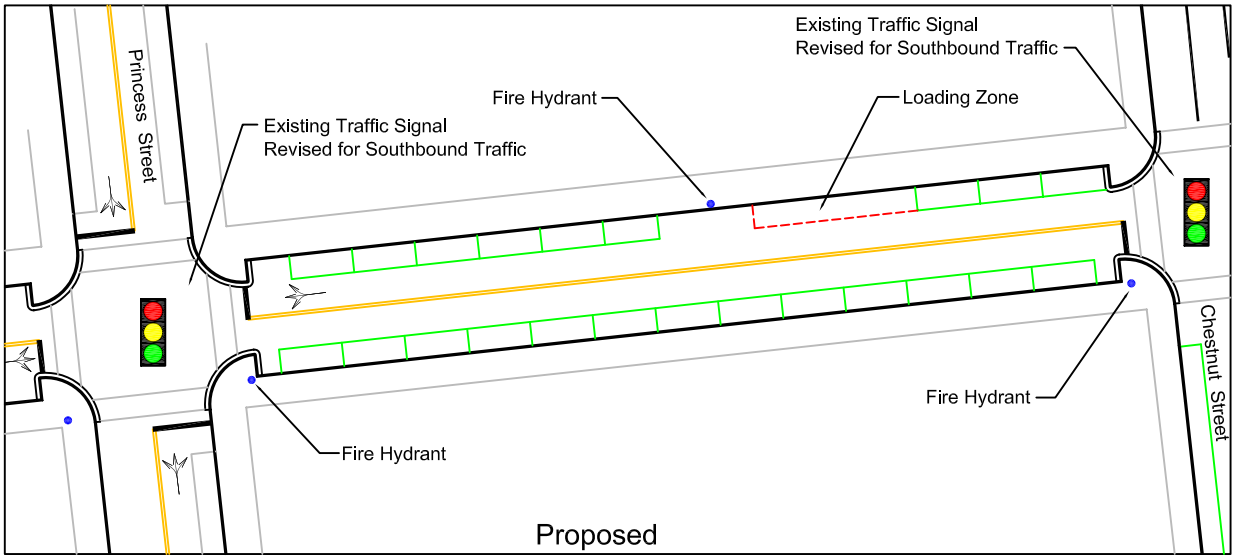
Notes:

1) There are 23 existing on-street spaces.
2) Each CVLZ is also signed as a taxi stand.

0 Block
North Front Street

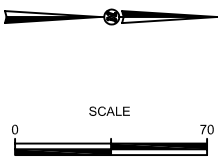
CITY OF WILMINGTON
TRAFFIC ENGINEERING

Development Services • Traffic Engineering Division
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888



Recommendations:

1) Add signal indications for SB traffic at Princess St.
2) Add detection loops at signal.
3) Remove 2 CVL zones.
4) Remove 1 angle handicapped space and aisle.
5) Remove midblock chokers and pedestrian crosswalk.
6) Install new chokers on Front St. at the intersections.
7) Restripe parking to provide 22 parallel spaces and 1 CVL zone.
8) Relocate parking meters and signs.



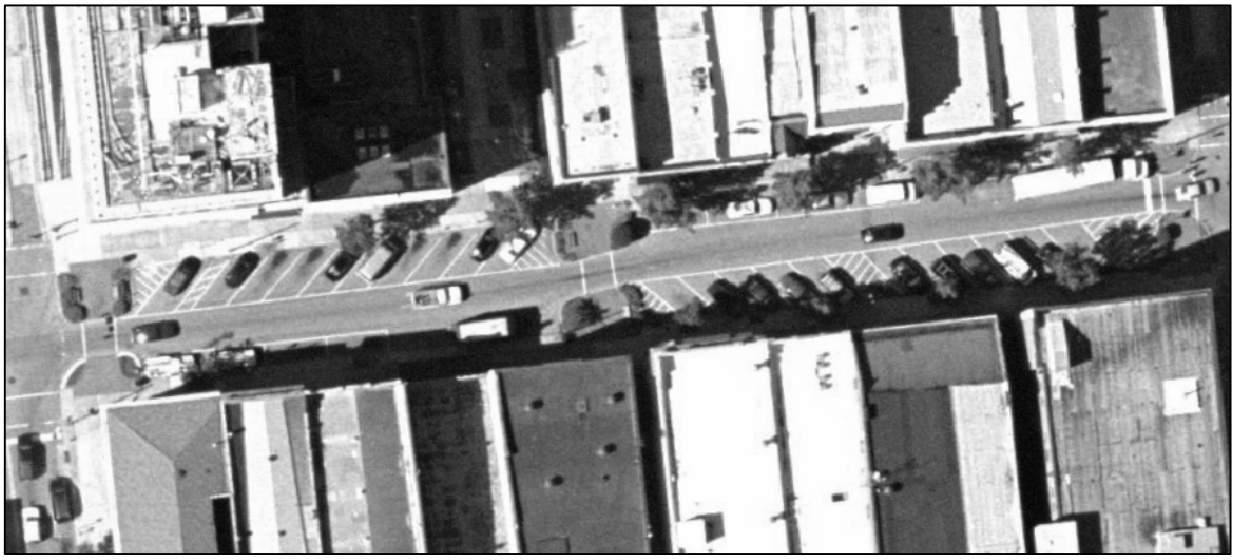
Notes:

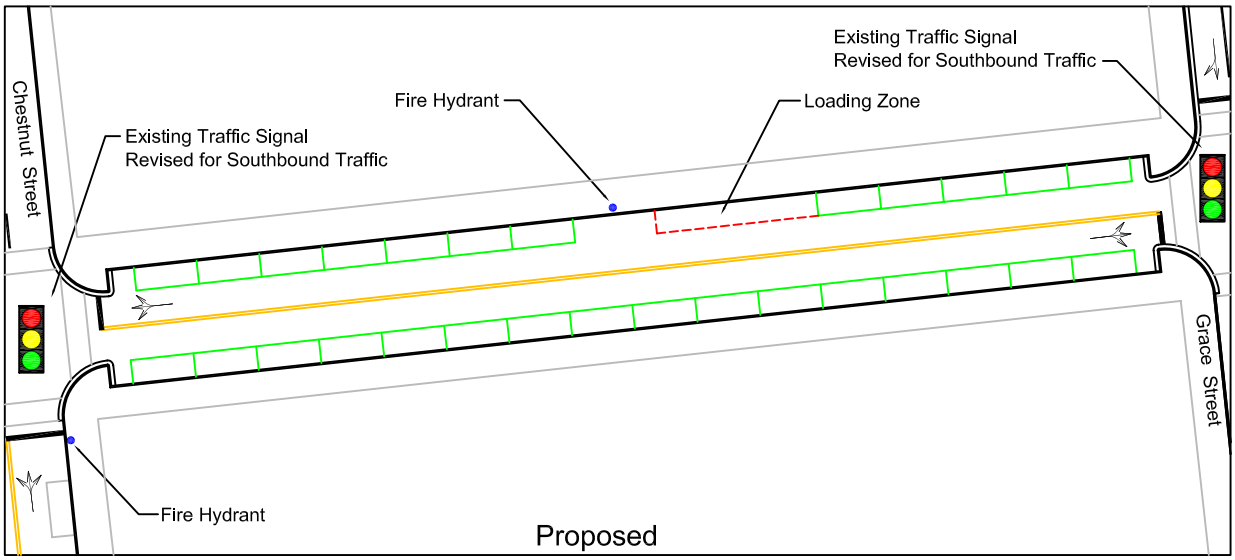
1) There are 23 existing on-street spaces.
2) Each CVLZ is also signed as a taxi stand.

100 Block
North Front Street

CITY OF WILMINGTON
TRAFFIC ENGINEERING

Development Services • Traffic Engineering Division
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888





Recommendations:

1) Add signal indications for SB traffic at Chestnut St.
2) Add detection loops at signal.
3) Remove 2 CVL zones.
4) Remove 2 angle handicapped spaces and aisles.
5) Remove midblock chokers and pedestrian crosswalk.
6) Install new chokers on Front St. at the intersections.
7) Restripe parking to provide 28 parallel spaces and 1 CVL zone.
7) Remove 1 PLZ.
8) Relocate parking meters and signs.

Notes:

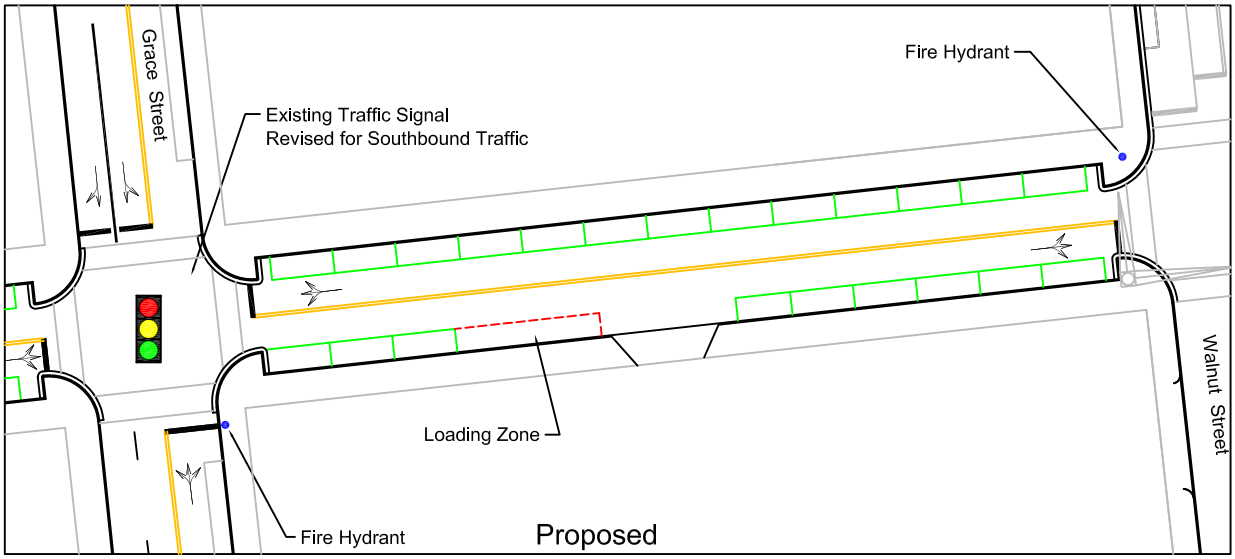
1) There are 29 existing on-street spaces.

SCALE
0 70

200 Block
North Front Street

CITY OF WILMINGTON
TRAFFIC ENGINEERING

Development Services • Traffic Engineering Division
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888



Recommendations:

1) Add signal indications for SB traffic at Grace St.
2) Add detection loops at signal.
3) Remove 1 CVL zones.
4) Install new chokers on Front St. at the intersections.
5) Restripe parking to provide 22 parallel spaces and 1 CVL zone.
6) Relocate parking meters and signs.

SCALE
0 70

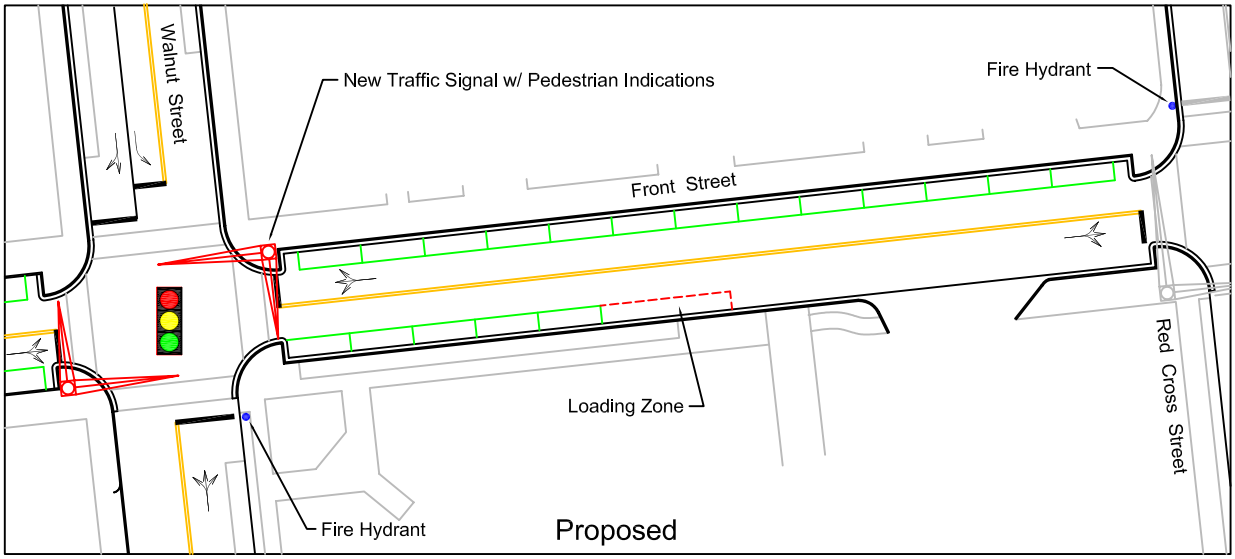
Notes:

1) There are 25 existing on-street spaces.
2) All signal poles must be replaced at Grace St.
3) Parking deck ramp to be addressed.

300 Block
North Front Street

CITY OF WILMINGTON
TRAFFIC ENGINEERING

Development Services • Traffic Engineering Division
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888



Recommendations:

1) Signalize the intersection at Walnut St..
2) Add detection loops at signal.
3) Remove 2 angle handicapped spaces and aisles.
4) Install new chokers on Front St. at the intersections.
5) Restripe parking to provide 18 parallel spaces and 1 CVL zone.
6) Relocate parking meters and signs.

SCALE
0 70

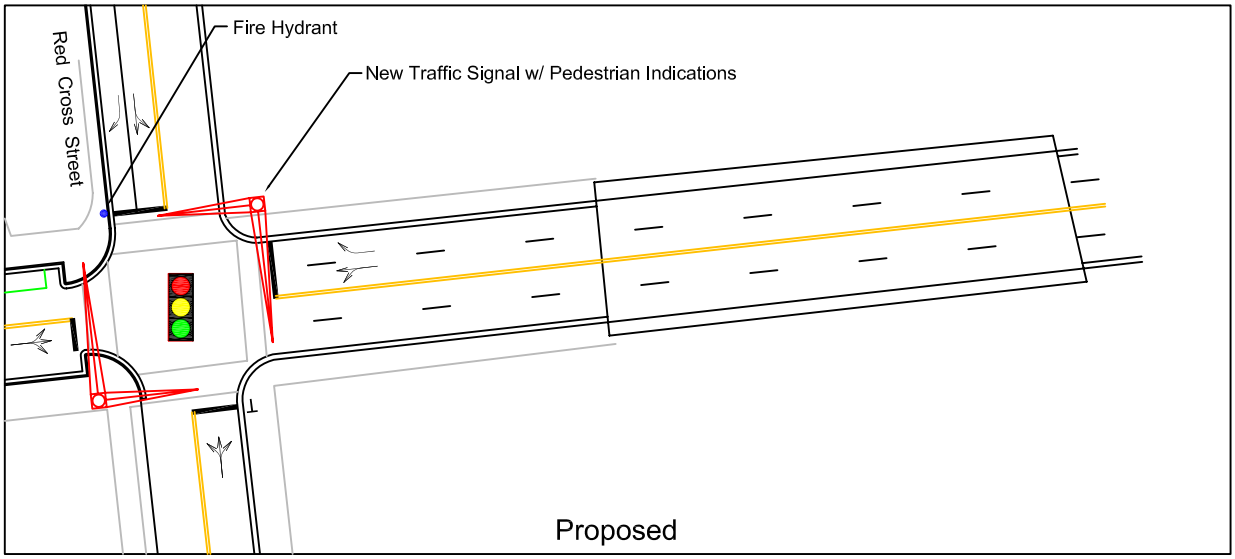
Notes:

1) There are 26 existing on-street spaces.

400 Block
North Front Street

CITY OF WILMINGTON
TRAFFIC ENGINEERING

Development Services • Traffic Engineering Division
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888



Recommendations:

1) Signalize the intersection at Red Cross St..
2) Add detection loops at signal.
3) Reassign lane usage on EB and SB approaches.

SCALE
0 70

CITY OF WILMINGTON
TRAFFIC ENGINEERING

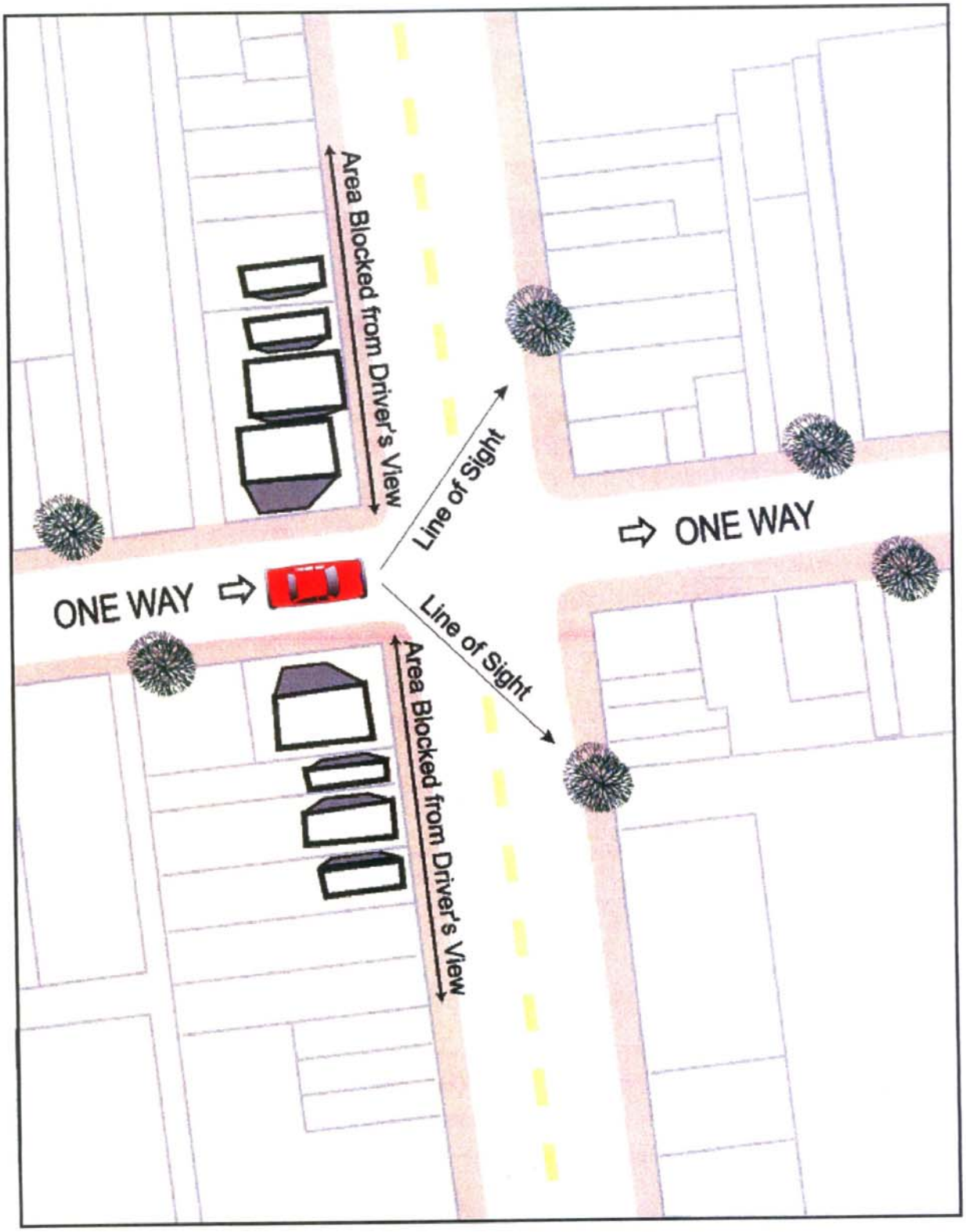
Development Services • Traffic Engineering Division
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888

500 Block
North Front Street

This 1978 photo shows the 0 block of North Front Street north from Market Street. At this time the street was one-way southbound with islands and angle parking.

This 1978 photo shows the 300 block of North Front Street south from Walnut Street. The block was completely closed to vehicles. This pedestrian mall concept has generally been viewed as unsuccessful since it restricts movement and causes people to park away from their destinations.

This 1983 photo shows the 300 block of North Front Street north from Grace Street. Here the block is open to vehicles and traffic is one-way northbound.



This graphic shows how one-way patterns can take certain buildings on intersecting side streets from a driver's view. With two-way traffic on North Front Street, businesses on the south side of cross streets will be visible to southbound motorists.